REMARKS

The Office Action dated May 12, 2009 has been received and considered. In this reply, claims 26 and 48 are amended and claims 26, 28-30, 32-36, 39-41, 44-46, and 48-52 are pending herein. Applicants respectfully submit that the amendments present the claims in better form for allowance. Applicants further submit that the amendments do not add new material, and support for the amendments may be found in the specification and drawings as originally filed. Further, claims 26 and 48 are amended without disclaimer and without prejudice. Applicants reserve the right to pursue the inventions of the originally filed claims and claims prior to this amendment later during the prosecution of this application or during a subsequently filed application. Reconsideration of the outstanding rejections is respectfully requested based on the following remarks.

1. Claims 26, 28-30, 32-41, 44-46, and 48-52 were rejected under 35 U.S.C. 103(a) as being unpatentable over US 2001/0006042 (Iijima) in view of US 5076203 (Vaidya). This rejection is respectfully traversed for the following reasons.

Claim 26 is drawn to a process for continuous deposition of a coating on an HTS tape. The process calls for translating a substrate along a substrate block, injecting an oxygen containing gas through the substrate block, and depositing a coating material on the substrate. Additionally, the process calls for impinging an ion beam from an ion source on the substrate during depositing, monitoring a thickness of the coating, a number of ions from the ion beam impinging on the substrate, and the biaxial texture of the coating during depositing, and controlling the ion source and the deposition source based on the monitoring. The coating material is a buffer layer having a biaxial texture and over which an HTS layer is formed. Injecting the oxygen containing gas directly onto the substrate through the substrate block improves the texture of the buffer layer as compared to supplying the gas indirectly into the deposition chamber.

Claim 48 is drawn to a process for continuous deposition of a coating on an HTS tape. The process specifically calls for translating a substrate along a substrate block including a plurality of gas channels and injecting an oxygen containing gas through the gas channels of the substrate block and onto the substrate during depositing to reduce an

average texture of the buffer layer. Additionally, the process calls for impinging an ion beam from an ion source on the substrate during depositing, monitoring the biaxial texture of the coating, a number of ions from the ion beam impinging on the substrate, and a thickness of the coating during depositing, and controlling the ion source, the deposition source, and an amount of oxygen containing gas based on the monitoring.

The PTO continues to rely upon Iijima to allegedly teach the main features of the claimed invention, and Vaidya to teach injecting gas through a porous substrate block. While Iijima teaches the deposition chamber includes a current density measuring device for measuring the ion beam current density, the current density measuring device appears to be positioned to monitor the current density of the ion beam impinging on the deposition source and not to monitor the number of ions from the ion beam impinging on the substrate. See FIG. 3 and paragraph [0080] of Iijima. Additionally, Iijima fails to teach or suggest monitoring the thickness or biaxial texture of the coating during depositing. Vaidya does not disclose or suggest the use of an ion beam nor a biaxial textured coating. As such, Vaidya is silent in regards to monitoring the number of ions from the ion beam impinging on the substrate and monitoring the biaxial texture of the coating. Further, Vaidya does not teach or suggest monitoring the thickness of the coating during depositing.

As such, Iijima and Vaidya, alone or in combination, fail to teach or suggest monitoring a thickness of the coating, a number of ions from the ion beam impinging on the substrate, and the biaxial texture of the coating during depositing. Further, absent the claimed monitoring, Iijima and Vaidya fail to teach or suggest controlling (i) the ion source and the deposition source or (ii) the ion source, the deposition source, and the amount of oxygen containing gas based on the monitoring. As such, the PTO has failed to establish a *prima facie* case of obviousness with respect to claims 26 and 48. Claims 28-30, 32-36, 39-41, 44-46, and 49-52 depend directly or indirectly from claim 26 and are allowable for at least the same reasons as claim 26. Therefore, Applicants respectfully request withdrawal of the 103(a) rejection over Iijima and Vaidya with respect to these claims.

2. Claims 26, 28-30, 32-41, 44-46, and 48-50 were rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima in view of Vaidya and further in view of US 2003/0221853 (Shiozawa). This rejection is respectfully traversed for the following reasons.

As previously discussed, Iijima and Vaidya fail to teach or suggest monitoring a thickness of the coating, a number of ions from the ion beam impinging on the substrate, and the biaxial texture of the coating during depositing, and controlling (i) the ion source and the deposition source or (ii) the ion source, the deposition source, and the amount of oxygen containing gas based on the monitoring.

The USPTO relies upon Shiozawa for teaching the use of air as a cooling gas for a moving substrate. Shiozawa does not disclose monitoring the thickness of the coating, a number of ions from the ion beam impinging on the substrate, and the biaxial texture of the coating during depositing. As such, Iijima, Vaidya, and Shiozawa, alone or in combination, fail to teach or suggest monitoring a thickness of the coating, a number of ions from the ion beam impinging on the substrate, and the biaxial texture of the coating during depositing. Further, absent the claimed monitoring, Iijima, Vaidya, and Shiozawa, fail to teach or suggest controlling (i) the ion source and the deposition source or (ii) the ion source, the deposition source, and the amount of oxygen containing gas based on the monitoring. As such, the PTO has failed to establish a *prima facie* case of obviousness with respect to claims 26 and 48. Claims 28-30, 32-36, 39-41, and 49-52 depend directly or indirectly from claim 26 and are allowable for at least the same reasons as claim 26. Therefore, Applicants respectfully request withdrawal of the 103(a) rejection over Iijima, Vaidya, and Shiozawa, with respect to these claims.

Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims.

Should the Examiner deem that any further action by the Applicants would be desirable for placing this application in even better condition for issue, the Examiner is requested to contact Applicants' undersigned representative at the number listed below.

The Commissioner is hereby authorized to charge any fees, which may be required, or credit any overpayment, to Deposit Account Number 50-3797.

Respectfully submitted,

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Date

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